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ENTERED AT 11:47:43 ON 17 OCT 2001

L1	106662	S (LOW-DENSITY LIPOPROTEIN RECEPTOR?) OR LDL
L2	885	S L1 AND BONE?
L3	167	S L2 AND (DEVELOP? OR OSTEOPHOROS?)
L4	88	DUP REM L3 (79 DUPLICATES REMOVED)
L5	88	SORT L4 PY
L6	6	S L5 AND REVIEW
L7	6	SORT L6 PY
L8	928	S L1 AND (BONE OR OSTEOPOROSIS?)
L9	551	S L8 AND (TREAT? OR THERAP? OR DEVELOPMENT?)
L10	291	DUP REM L9 (260 DUPLICATES REMOVED)
L11	291	SORT L10 PY
L12	7	S L11 AND CHROMOSOME?
L13	1097435	S BONE OR OSTEOPORISIS
L14	853	S L13 AND L1
L15	256	S L14 AND L10
L16	11	S L15 AND REVIEW
		E CAPULLI J?
L17	0	S E3

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J Biochem (Tokyo) 1998 Dec 1;124(6):1072-6

A new low density lipoprotein receptor related protein, LRP5, is expressed in hepatocytes and adrenal cortex, and recognizes apolipoprotein E.

Kim DH, Inagaki Y, Suzuki T, Ioka RX, Yoshioka SZ, Magoori K, Kang MJ, Cho Y, Nakano AZ, Liu Q, Fujino T, Suzuki H, Sasano H, Yamamoto TT

Tohoku University Gene Research Center, Sendai, 981-8555, Japan.

The isolation and characterization of rabbit and human cDNAs revealed a new low density lipoprotein receptor (LDLR)-related protein (LRP) designated as LRP5. Human LRP5 cDNA encodes a 1, 616-amino acid type I membrane-like protein with three ligand binding repeats in its extracellular region. LDLR-deficient cells transduced by recombinant adenovirus containing human LRP5 exhibited increased binding of apolipoprotein E (apoE)-enriched beta-migrating very low density lipoprotein. Northern blotting and in situ hybridization revealed a high level of LRP5 expression in hepatocytes and the adrenal gland cortex. In LDLR-deficient Watanabe heritable hyperlipidemic rabbits, LRP5 mRNA was increased in the liver and accumulated in cholesterol-laden foam cells of atherosclerotic lesions.

PMID: 9832610, UI: 99054722

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Gene 1998 Aug 17;216(1):103-11

Cloning of a novel member of the low-density lipoprotein receptor family.

Hey PJ, Twells RC, Phillips MS, Yusuke Nakagawa, Brown SD, Kawaguchi Y, Cox R, Guochun Xie, Dugan V, Hammond H, Metzker ML, Todd JA, Hess JF

Merck Research Laboratories, Department of Human Genetics, West Point, PA 19486, USA.

A gene encoding a novel transmembrane protein was identified by DNA sequence analysis within the insulin-dependent diabetes mellitus (IDDM) locus IDDM4 on chromosome 11q13. Based on its chromosomal position, this gene is a candidate for conferring susceptibility to diabetes. The gene, termed low-density lipoprotein receptor related protein 5 (LRP5), encodes a protein of 1615 amino acids that contains conserved modules which are characteristic of the low-density lipoprotein (LDL) receptor family. These modules include a putative signal peptide for protein export, four epidermal growth factor (EGF) repeats with associated spacer domains, three LDL-receptor (LDLR) repeats, a single transmembrane spanning domain, and a cytoplasmic domain. The encoded protein has a unique organization of EGF and LDLR repeats; therefore, LRP5 likely represents a new category of the LDLR family. Both human and mouse LRP5 cDNAs have been isolated and the encoded mature proteins are

J Clin Endocrinol Metab 2001 Aug;86(8):3735-41

Is population bone mineral density variation linked to the marker D11S987 on chromosome 11q12-13?

Deng HW, Xu FH, Conway T, Deng XT, Li JL, Davies KM, Deng H, Johnson M, Recker RR

Osteoporosis Research Center, Creighton University, Omaha, Nebraska 68131, USA.

Our purpose is to test linkage of human chromosome 11q12-13 to BMD variation. Chromosome 11q12-13 has been linked to three BMD-related phenotypes that are inherited as Mendelian traits in human pedigrees: an autosomal dominant high bone mass trait, autosomal recessive osteoporosis pseudoglioma, and autosomal recessive osteopetrosis. A sibling pair study with 374 sibships showed significant linkage of D11S987 to normal BMD variation, with a maximum logarithm of odds score of 3.5. However, a subsequent linkage study with a total of 595 sibling pairs demonstrated reduced significance for linkage of D11S987 to bone mineral density variation, with a logarithm of odds score less than 2.2. We genotyped five markers in a genomic region of approximately 27 cM centering on D11S987 and measured bone mineral density and other traits (weight, etc.) for 635 individuals from 53 human pedigrees. Each of these pedigrees was ascertained through a proband with bone mineral density Z-scores less than -1.28 at the hip or spine. Adjusting for age, sex, and weight as covariates, we performed two-point and multipoint linkage analyses using the variance component linkage analysis method implemented in Sequential Oligogenic Linkage Analysis Routines. We found little evidence of linkage of these five markers to bone mineral density at the spine, hip, wrist and total body bone mineral content. The maximum logarithm of odds score at these five markers was 0.25, and the maximum logarithm of odds score at D11S987 was 0.15. Therefore, although we cannot exclude the linkage of D11S987 region to bone mineral density variation, there is no evidence for linkage of the marker D11S987 on human chromosome 11q12-13 to bone mineral density variation in our study population.

PMID: 11502804, UI: 21394094